REMARKS/ARGUMENTS

This Amendment is being filed in response to the Office Action dated May 22, 2008. Reconsideration and allowance of the application in view of the amendments made above and the remarks to follow are respectfully requested.

Claims 1-20 are pending in the Application. Claims 1, 9, 11, 12 and 20 are independent claims.

Claims 1, 4, 5, 8, 12, 15, 16 and 19 are rejected under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Publication Patent No. 2003/0018267 to Erikson ("Erikson"). Claims 2, 9, 11, 13 and 20 are rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Erikson. Claims 3, 10 and 14 are rejected under 35 U.S.C. §103(a) as allegedly being obvious over Erikson in view of Japanese Patent Publication No. JP 06-090950 to Odaka ("Odaka"). Claims 6 and 17 are rejected under 35 U.S.C. §103(a) as allegedly being obvious over Erikson in view of Patent Publication No. 2006/0150380 to Ossman ("Ossman"). Claims 7 and 18 are rejected under 35 U.S.C. §103(a) as allegedly being obvious over Erikson in view of U.S. Patent No. 5,655,276 to Pattanayak ("Pattanayak"). The rejections of claims 1-20 are respectfully traversed. It is respectfully submitted that claims 1-20 are allowable over Erikson alone and in view of any combination of Odaka, Ossman and Pattanayak for at least the following reasons.

Erikson shows an ultrasonic array 13 connected to an integrated circuit (IC) 32 via bump pads 34 (see, FIG. 5 and paragraph [0047]). Erikson further shows that the substrate of the IC may be thinned to reduce crosstalk. While, Erikson shows that the silicon may be thinned down to 50 μm, it is respectfully submitted that Erikson does not suggest that thinning down generally leads to more transparency of the IC as suggested in the Final Office Action (see, Final Office Action,

bottom of page 3 continuing to top of page 4). The Final Office Action mischaracterizes Erikson as showing that (emphasis added) "Erikson et al. clearly teach the desirability and advantage of having an acoustically translucent IC and the achievement of such by making the component thin. Therefore it would have been obvious to one of ordinary skill in the art to achieve even greater acoustic translucence by having the IC component thinner than 50 pm." It is interesting to note that while the Final Office Action makes this assertion, it cites no sections of Erikson for supporting this allegation.

In fact, Erikson merely suggests that the prior art technology is capable of thinning an IC to 50 μm, yet in fact suggests a more suitable figure to be of the order of 210-420 μm (see, page 4, paragraph [0049]). Even a cursory review of Erikson makes clear that Erikson in fact teaches that thinner beyond a value of the order of 210-420 μm for a frequency of between 5-10 MHZ results in more reflectivity. In fact, Erikson FIGs. 6 and 7 make clear that as the IC is thinned below that which is taught by Erikson (420 μm for a frequency of 5 MHZ), the reflectivity is increased! Accordingly, Erikson in fact teaches away from thinning the IC below the range suggested to decrease reflectivity. No person of ordinary skill in the art would take Erikson to disclose or suggest thinning the IC to "less than 50 μm" as substantially recited in each of independent claims 1, 9, 11, 12 and 20.

It is respectfully submitted that the Final Office Actions recitation of In re Aller ("Aller") for support of the allegation that discovering an optimal range of Erikson, renders the claims obvious is misplaced. It is respectfully submitted that the analysis applied by Aller is applicable in a case wherein "subject matter [is] encompassed by the prior art ..." (See, MPEP, §2144.05 II(A)), and thereby applies to an optimization of a previously disclosed range. While that court found that a

range not encompassed was obvious, the ranges disclosed by Aller were particularly close to the ranges claimed (in Aller, temperature a between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.)

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of establishing a prima facie case of obviousness. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1442, 1444 (Fed. Cir. 1992). See also In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). The Examiner can satisfy this burden by showing that some objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art suggests the claimed subject matter. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). MPEP §2142 makes clear that "[t]he examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. If the examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of non-obviousness.

It is respectfully submitted that the Office Action has not met the burden of making a prima facia case of obviousness under 35 U.S.C. §103. In alleging that Erikson teaches in effect thinner is less reflective, without explaining some basis for that conclusion, when in fact somewhat the opposite is taught by Erikson (e.g., thinner than 420 μm for a frequency of 5 MHZ results in more reflectivity as shown by FIGs. 6 and 7), does not establish a prima facie case of obviousness. It is not the Applicants' burden to establish non-obviousness when the initial burden is not met by the Final Office Actions allegations.

In Erikson, the ranges of the pending claims is not encompassed and in fact, Erikson teaches away from the range recited in the claims as discussed above. As made clear in MPEP, §2144.05 III, (citation provided, emphasis added) "[a] prima facie case of obviousness may also be rebutted[, although in this case, it is asserted this burden has not been met as discussed above,] by showing that the art, in any material respect, teaches away from the claimed invention. In re Geisler, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997)

It is respectfully submitted that clearly Erikson in general and FIGs. 6 and 7 particularly, teach away from the presently claimed invention. There is no suggestion to modify a prior art reference where the modification would render the device inoperable for its intended purpose. (In re Gordon, 733 F.2d 900 (Fed. Cir. 1984.)) Reducing thickness in the system as taught by Erikson would result in a system with increased reflectivity and therefore renders Erikson inoperable for its intended purpose. A person of ordinary skill in the art would never look to modify Erikson by reducing the thickness of the IC below the range taught because as taught by Erikson, the result is increased reflectivity.

Accordingly, it is respectfully submitted that the probe of claim 1 is not anticipated or made obvious by the teachings of Erikson. For example, Erikson does not disclose or suggest, a probe that amongst other patentable elements, comprises an (illustrative emphasis added) "ultrasound transducer probe, comprising: an attenuation backing substrate; an integrated circuit coupled to the attenuation backing substrate, wherein the integrated circuit is translucent to acoustic waves; and an array of piezoelectric elements coupled to the integrated circuit; the array of piezoelectric elements having an acoustic matching layer disposed on a first surface of the array thereof, wherein the thickness of the integrated circuit is less than 50 μm" as recited in claim 1, and as similarly recited in

each of claims 9, 11, 12 and 20. It is respectfully submitted that Erikson does not disclose the claimed range and in fact teaches away from even its consideration. Each of Odaka, Ossman and Pattanayak are introduced for allegedly showing other elements of the claims and as such, do nothing to cure the deficiencies in Erikson.

Based on the foregoing, the Applicant respectfully submits that independent claims 1, 9, 11, 12 and 20 are patentable over Erikson alone and in view of any combination of Odaka, Ossman and Pattanayak and notice to this effect is earnestly solicited. Claims 2-8, 10, 13-19 respectively depend from one of claims 1, 9, and 12 and accordingly are allowable for at least this reason as well as for the separately patentable elements contained in each of the claims. Accordingly, separate consideration of each of the dependent claims is respectfully requested.

In addition, Applicant denies any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Applicant reserves the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

Applicant has made a diligent and sincere effort to place this application in condition for immediate allowance and notice to this effect is earnestly solicited.

Respectfully submitted,

By 

Gregory L. Thorne, Reg. 39,398
Attorney for Applicant(s)
July 22, 2008

THORNE & HALAJIAN, LLP
Applied Technology Center
111 West Main Street
Bay Shore, NY 11706
Tel: (631) 665-5139
Fax: (631) 665-5101